



PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference NO 6921/WO/PCT		FOR FURTHER ACTION		See Form PCT/PEA/416
International application No. PCT/EP2004/009529		International filing date (day/month/year) 26.08.2004		Priority date (day/month/year) 27.10.2003
International Patent Classification (IPC) or national classification and IPC A23F5/10, A23F5/46, A23L1/234, A23F5/24				
Applicant NESTEC S.A. et al.				
<p>1. This report is the International preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 7 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> sent to the applicant and to the International Bureau a total of sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (Indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>				
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input checked="" type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application</p>				
Date of submission of the demand 30.03.2005		Date of completion of this report 13.09.2005		
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized Officer Rinaldi, F Telephone No. +49 89 2399- 		

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2004/009529

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language, which is the language of a translation furnished for the purposes of:

- ☐ international search (under Rules 12.3 and 23.1(b))
- ☐ publication of the international application (under Rule 12.4)
- ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-12 as originally filed

Claims, Numbers

1-19 as originally filed

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
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Box No. IV Lack of unity of invention

1. ☐ In response to the invitation to restrict or pay additional fees, the applicant has:
- ☐ restricted the claims.
 - ☐ paid additional fees.
 - ☐ paid additional fees under protest.
 - ☐ neither restricted nor paid additional fees.
2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
- ☐ complied with.
 - ☒ not complied with for the following reasons:
see separate sheet
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☒ all parts.
 - ☐ the parts relating to claims Nos. .

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	9, 18, 19
	No: Claims	1-8, 10-17
Inventive step (IS)	Yes: Claims	9, 18, 19
	No: Claims	1-8, 10-17
Industrial applicability (IA)	Yes: Claims	1-19
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

**INTERNATIONAL PRELIMINARY REPORT
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Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item IV

Lack of unity of invention

- 1 The present application lacks unity within the meaning of R.13 PCT.
- 1.1 The following separate inventions or groups of inventions are not so linked as to form a single general inventive concept:
 - Invention 1 Fermented coffee component with floral and/or floral aroma and a fermentation process (claims 1-8, 10 (partly), 11-17)
 - invention 2 Fermented coffee aroma with specific ratio of methyl butanol to methylbutanal (claims 9, 10 (partly), and 18-19)
- 1.2 The common concept linking together the subject-matter of invention 1 and 2 is the fermented coffee component having floral or fruity aroma. This is however known in the art, for instance from document D1 (see item V of the present communication).
- 1.3 The entire subject-matter claimed could be searched without undue effort.
- 2 The present communication will address both inventions.

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Cited prior art

- 1 The following documents are referred to in this communication; the numbering will be adhered to in the rest of the procedure:
 - D1: ARGALIZ A ET AL: "Quantitative descriptive flavor profile of five brewed Mexican coffees" FSTA, 1997, XP002271954
 - D2: DATABASE WPI Section Ch, Week 199246 Derwent Publications Ltd., London, GB; Class D16, AN 1992-377558 XP002271957 & JP 04 278072 A (KANEBO LTD) 2 October 1992 (1992-10-02)
 - D3: DATABASE FSTA [Online] INTERNATIONAL FOOD INFORMATION SERVICE (IFIS), FRANKFURT/MAIN, DE; 2000, SOARES M ET AL: "Fruity flavour production by *Ceratocystis fimbriata* grown on coffee husk in solid-state fermentation." XP002271955 Database accession no. 2000-00-b0966
 - D4: EP-A-0 791 296 (NESTLE SA) 27 August 1997 (1997-08-27)
 - D5: US-A-4 867 992 (BONIELLO BARBARA ET AL) 19 September 1989 (1989-

09-19)

- D6: DATABASE EMBASE [Online] ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, NL; 1 July 2003 (2003-07-01), HAUCK T ET AL: "Formation of 4-hydroxy-2,5-dimethyl-3[2H]-furanone by Zygosaccharomyces rouxii: Identification of an intermediate" XP002271956 Database accession no. EMB-2003291945
- D7: LEE K G; SHIBAMOTO T: "Analysis of volatile components isolated from Hawaiian green coffee beans (Coffea arabica L.)" FLAVOUR AND FRAGRANCE JOURNAL, vol. 17, 15 April 2002 (2002-04-15), pages 349-351, XP009031885

Novelty - Invention 1

- 2 The subject-matter of independent product claims 1 and 13 and of independent process claim 14 does not fulfil the requirements of Art.33(2) PCT. Reference is made to the following documents, for relevant passages please see International Search Report.
- 2.1 D1 discloses coffee base and beverages with fruity or floral aroma. As is generally known in the art, all coffee undergoes a fermentation process, usually previous to the roasting process to remove mucilaginous material. This anticipates the subject-matter of independent claims 1 and 13.
- 2.2 D2 discloses a coffee base and beverage having a refreshing taste / aroma obtainable from a process wherein liquid coffee extract is fermented with Saccharomyces at a temperature of 20 °C. This anticipates the subject-matter of independent claims 1, 13 and 14.
- 2.3 D3 discloses fermentation of coffee component husk in order to provide a fruity flavour such as pineapple and banana. The coffee beverage is considered to be implicitly disclosed. This anticipates the subject-matter of independent claims 1 and 13.

Novelty - Invention 2

- 3 The subject-matter of product claims 9 and 18 and 19 fulfills the requirements of Art.33(2) PCT. D7 discloses (Table 1) a dried green coffee (which has obviously already undergone fermentation during removal of mucilaginous layer) wherein the ratio of 3-methylbutanol to 3-methylbutanal is 3.3. However, the amount of 2-methyl compounds remains undisclosed.

Inventive step - invention 1

- 4 In view of the divulgation of D1-D6 the subject-matter presently disclosed in claims 1-8 and 10-17 is considered to be obvious.
- 4.1 D4 teaches that low alcohol amounts in fermented coffee can be obtained when the fermentation is carried out at a low temperature, i.e. between 0°C and 25°C. This divulgation renders the subject-matter of process claim 14 obvious in combination with the disclosure of D1 and D3.
- 4.2 D5 discloses that a coffee base and beverage with a buttery flavour is obtained when diacetyl producing microorganisms are grown on coffee solids. Hence, it is not regarded to be inventive to inoculate coffee solids with microorganisms producing fruity or floral substances (such as esters) in order to provide a coffee base and beverage having a fruity and/or floral aroma (see for instance D6).
- 4.3 At present, the subject-matter disclosed in the depending claims appears to be trivial to the one skilled in the art and does not justify acknowledgement of an inventive step.

Inventive step - invention 2

- 5 The subject-matter of present claim 9, 18 and 19 involves an inventive step (Art.33(3) PCT). There is no indication to provide a beverage base with fruity and floral aroma notes having the claimed ratio of compounds.

Re Item VIII

Certain observations on the international application

- 1 The following clarity deficiencies were noted (Art.6 PCT).
- 1.1 The subject-matter of claim 1 and claim 11 is formulated as a result to be achieved: The wording of claim 1 discloses a desired product but it fails to describe how said product is obtainable.
- 1.2 The expression "being substantially non-alcoholic" (claim 1) has no well-recognized meaning in the art and is not suitable for delimiting the exact scope of said claim (PCT-Guideline 5.34).
- 1.3 Similarly, the expressions "increased levels" (claim 7) and "artificially fermented" (claim 8) have no particular, well-recognized meaning in the art and are not suitable for delimiting the exact scope of said claims.